

What we claim:

- 1) A chromatography column comprising a column body having an open top and an open bottom and a volume between, said volume being defined by one or more vertical walls which form the body having an inner and an outer wall; a fixed or adjustable bottom plate containing an outlet, said bottom plate being liquid tightly sealed either fixedly or adjustably relative to the bottom of the column body, a movable or fixed top plate contained within the column body volume, said top plate being formed of a flow distributor, one or more movement rods attached to a top surface of the flow distributor and a seal plate arranged around the outer periphery of the flow distributor, the seal plate comprising a seal attached to the seal plate, the seal plate being mounted around and above the top surface of outer periphery of the flow distributor and fixed to the top surface by one or more pins, said one or more pins having a positive compression means for normally and positively biasing the seal plate against the top surface of the flow distributor, a space formed between the seal plate lower surface and the flow distributor top surface, an opening formed in the seal plate for the selective introduction or evacuation of a pressure source to the space, and one or more second seals placed between the seal plate and the flow distributor for containing the pressure source within the space.
- 2) The device of claim 1 wherein the pressure source is selected from the group consisting of compressed air, compressed gas, mains-water tap pressure or a hydraulic fluid.
- 3) The device of claim 1 wherein the compression means is one or more springs.
- 4) The device of claim 1 wherein the compression means is a material having a stored physical energy potential.
- 5) The device of claim 1 wherein the compression means is selected from the group consisting of compressed elastomers and rubbers.

- 6) The device of claim 1 wherein the compression means is selected from the group consisting of gas sacks and pistons.
- 7) A movable plate for a chromatography column comprising a flow distributor and a seal plate, the seal plate being mounted on top of at least the outer periphery of the flow distributor, the plate being connected to the distributor by one or more pins, the one or more pins having a compression means for normally and positively biasing the plate toward the flow distributor, the compression means for biasing being attached to the pins and acting on an outer surface of the plate, the plate having a seal arranged at its lowermost portion at least on its outer periphery, a space formed between the lower surface of the seal plate and the upper surface of the flow distributor, an opening formed in the seal plate for the selective introduction and removal of a pressurized energy, the energy being selected from the group consisting of compressed air, a compressed gas, water, and a hydraulic fluid, and one or more seals formed between the plate and the flow distributor to contain the pressurized fluid within the space.
- 8) The device of claim 7 further comprising a bladder contained within the space and attached to the opening for receiving the pressurized energy.
- 9) A movable plate for a chromatography column comprising a flow distributor and a seal plate, the seal plate being mounted on top of at least the outer periphery of the flow distributor, the plate being connected to the distributor by one or more pins, the one or more pins having a compression means for normally and positively biasing the plate toward the flow distributor, the compression means for biasing being attached to the pins and acting on an outer surface of the plate, the plate having a seal arranged at its lowermost portion at least on its outer periphery, a space formed between the lower surface of the seal plate and the upper surface of the flow distributor, an opening formed in the seal plate for the selective introduction and removal of a pressurized energy, the energy being selected from the group consisting of

compressed air, compressed gases, compressed liquids and a hydraulic fluid, and one or more seals formed between the plate and the flow distributor to contain the pressurized fluid within the space and a bladder contained within the space and attached to the opening for receiving the pressurized energy.

- 10) The device of 7 wherein the compression means is one or more springs.
- 11) The device of 7 wherein the compression means is a material having a stored physical energy potential.
- 12) The device of 7 wherein the compression means is a material having a stored physical energy potential and is selected from the group consisting of compressed elastomers and rubbers.
- 13) The device of 7 wherein the compression means is a material having a stored physical energy potential and is selected from the group consisting of gas sacks and pistons.
- 14) The device of claim 1 further comprising a bladder contained within the space and attached to the opening for receiving the pressure source.
- 15) A process of forming a liquid tight seal in a movable plate of a chromatography column with an inner wall of the column comprising the steps of providing a chromatography column having a column body having an open top and an open bottom and a volume between, said volume being defined by one or more vertical walls which form the body, the walls having an inner and an outer wall surface; a fixed bottom plate containing an outlet, said bottom plate being liquid tightly sealed to the bottom of the column body and a movable top plate contained within the column body volume, said top plate being formed of a flow distributor, one or more movement rods attached to a top surface of the flow distributor and a seal plate arranged around the outer periphery of the flow distributor, the seal plate comprising a seal attached to the seal plate, the seal plate being mounted around and above the top surface of outer periphery of the flow distributor and fixed to the top surface by one or more pins, said one or more pins having a

positive compression means for normally and positively biasing the seal plate against the top surface of the flow distributor, a space formed between the seal plate lower surface and the flow distributor top surface, an opening formed in the seal plate for the selective introduction or evacuation of a pressure source to the space, and one or more second seals placed between the seal plate and the flow distributor for containing the pressure source within the space, applying the pressure source to the space so as to cause the seal plate to move away from the flow distributor, moving the top plate at a desired location within the body and removing the pressurized source from the space allowing the compression means to move the seal plate against the flow distributor compressing the seal against the flow distributor and inner surface of the inner wall of the body forming a liquid tight seal.

- 16) The device of claim 7 wherein the movable plate is a top plate.
- 17) The device of claim 7 wherein the movable plate is a bottom plate.
- 18) The device of claim 9 wherein the movable plate is a bottom plate.
- 19) The device of claim 9 wherein the movable plate is a top plate.
- 20) The device of claim 7 wherein both top plate and the bottom plate are movable.
- 21) The device of claim 9 wherein both top plate and the bottom plate are movable.